

Over the Counter (OTC) Drug Sales as Part of Syndromic Surveillance

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Monitoring of over-the-counter (OTC) drug sales is commonly used as a component of syndromic surveillance systems across the country and is currently used at the Indiana State Department of Health (ISDH).

Syndromic surveillance is defined as the ongoing, timely recognition, collection, and analysis of information that may detect a bioterrorist activity or other public health emergency. A public health emergency may be a foodborne or waterborne outbreak. Syndromic surveillance is the key to recognizing a public health emergency or bioterrorism event prior to an actual diagnosis, which may take several days. Syndromic surveillance is conducted by monitoring chief medical complaints (syndromes) from emergency room data, local school absenteeism, increased sales of OTC medications, and a variety of other data sources.

Over-the-Counter (OTC) Drug Surveillance

OTC drug surveillance is the daily monitoring of sales of specific categories of drugs throughout the state of Indiana. These categories include: anti-diarrheal medications, cough/cold remedies, pediatric anti-fever medicine, electrolytes, internal analgesics and thermometers. It has been shown in retrospective evaluation of several disease outbreaks that increased sales of a particular OTC drug provided a signal of an event of illness in multiple patients before the patients entered the health care system and received a diagnosis. If events can be identified earlier, then actions to contain and/or eliminate the spread of these events could be implemented earlier, thereby preventing more people from becoming ill.

OTC drug sales are monitored by accessing the Indiana state data through the National Retail Data Monitoring System (NRDMS) developed by the University of Pittsburgh. NRDMS is a component of the larger syndromic surveillance system called Real On- Time Disease Surveillance (RODS), also developed by the University of Pittsburgh.

National Retail Data Monitor System (NRDMS)

Currently, the ISDH uses the NRDMS database to monitor OTC drug sales daily. The NRDMS began storing data in October 2002. Thirty-three states now use the system, with approximately 268 users. Users represent local health departments, state health departments and the Centers for Disease Control and Prevention (CDC). The goal of the program is to have 70% of retailers in each state (under contract) report data. At present, Indiana has around 40%.

There are two main features of RODS that allow reporting and interpretation of data, Mapplot and Epiplot. Mapplot signals increased OTC sales by indicating zip code areas with increased sales in red. Statistical analysis performed in Pittsburgh of past and present data allows the display of sales data results

that are above the baseline for a particular zip code. Epiplot allows the viewer to look at the data from past and present trends with the data going back to February 2003.

The ISDH now stores the OTC data from Pittsburgh in an Oracle database. This will provide more storage of data, more in-depth analysis, and integration of the OTC data with other data.

It is important to note that OTC drug monitoring is just one of the multiple data sources needed in syndromic surveillance. OTC monitoring cannot function optimally as a “stand alone” system for detecting events. It should be integrated with data from hospital emergency departments, school absenteeism, poison control center call-ins, laboratory tests, mortality statistics, managed care patient visits, and other sources. Syndromic surveillance requires “real time” continuous vigilant assessment of multiple sources of data to determine immediate recognition of a potential outbreak and to implement rapid control measures.

The ISDH will continue to improve the OTC monitoring system by:

- Recruiting more drug stores in Indiana to participate in the program
- Increasing in-depth analysis of the data
- Integrating the data with other data sources
- Developing alert and response systems

For questions or more information about this system, contact Mike Wilkinson, ISDH, at (317) 234-2827 or mwilkins@isdh.state.in.us. You may also contact Linda Jones, ISDH, at (317) 234-2807 or ljones@isdh.state.in.us.

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